

Addition of a new species to *Ecnomus* McLachlan, 1864 (Trichoptera: Ecnomidae) along with key to its Indian Fauna

Manpreet S. Pandher*¹ and Malkiat S. Saini²

1. University School of Agriculture, Desh Bhagat University, Mandi Gobindgarh,
Fatehgarh Sahib-147301, India

2. Asian Institution, Patiala-147002, India

(e-mail: *mpandher.iari@gmail.com)

Abstract

A new species is added to the Ecnomid fauna of India. The newly described species *Ecnomus suni* sp. nov. is recorded from Cherrapunjee (Meghalaya). In addition, a key to the males of Indian species of *Ecnomus* is provided.

Keywords: *Ecnomidae*, India, Himalaya, Meghalaya.

Introduction

The type genus *Ecnomus* McLachlan was the only genus included in Ulmer's (1903) Hydropsychidae under subfamily Ecnominae (now Ecnomidae). The Ecnomidae now includes 7 genera: *Ecnomus* McLachlan, *Daternomina* Neboiss, *Ecnomina* Kimmins, *Austrotinodes* Schmid, *Absensomina* Cartwright, *Wellsomina* Cartwright and *Neboissomina* Cartwright. The record of species diversity of *Ecnomus* McLachlan has increased many folds during the past 22 years. According to Cartwright (1990) the genus had only 130 species; within a span of only seven years Li and Morse (1997) gave this figure as 221 species. This number swelled up to 275 species as reported by Johanson and Espeland (2010) and at present this figure stands at 280 species (Morse, 2012). Side by side there is a rapid increase in the knowledge of females and the larvae of most genera of Ecnomidae (Cartwright, 1990, 1997, 2008, 2009, 2010 and 2011). It was Li and Morse (1997) who applied the cladistic principles to this family and traced the phylogeny of Chinese species

of this genus. As far as oriental region is concerned most of the contributions are by Malicky (1979, 1993, 1995a, 1995b, 1997, 2000, 2007, 2008 and 2009); Malicky and Chantaramongkol (1993a, 1993b) and Malicky *et al.* (2004 and 2006) who described many species from Bhutan, Srilanka, Vietnam, Nepal, Thailand, China, Laos, Indonesia (Bali, Kalimantan, Sumatra, Sulawesi), Malaysia, Myanmar and India (Andaman and Nicobar).

From the Indian region only 7 species are on record. Mosely (1932) was the first to describe 3 species from India. He was followed by Martynov (1935) with 3 species. Malicky (1979) reported 1 new species of this genus from Andaman Island. It is nearly 33 years or so that no contribution has been made to this genus from India. In this paper a new species is described and illustrated along with the key to the males of Indian species.

Materials and Methods

Adults were collected by light traps (UV and mercury vapour bulb) placed near

the edge of high altitude streams of the Himalayan belt of India. The specimens were preserved in 70% ethyl alcohol with a drop of glycerol added. Pertinent collection and locality data were recorded.

The male genitalia were removed from the specimens and put in 10% KOH solution overnight. After this treatment the genitalia were put in 80% ethyl alcohol with a drop of glycerol and observed for morphological characters. The drawings of various aspects were done with the aid of a stereoscope (maximum magnification of 160X) fitted with an ocular grid in one eye piece. The final drawings were rendered in black ink. The illustrations were scanned at 600 dpi grayscale, and mounted onto plates in Adobe® Photoshop® 7.0. The genitalic terminology corresponds to Li and Morse (1997). Type specimens are deposited in the Punjabi University Patiala Museum (PUPM), Department of Zoology and Environmental Sciences, Punjabi University, Patiala.

Systematics

Ecnomus McLachlan, 1864: 26, 30.

Type species: *Philopotamus tenellus* Rambur 1842: 503 (monobasic).

Synonymy:

= *Ecnomiella* Mosely, 1935: 221-222.

Type species: *Ecnomiella bifurcata* Kimmins (original designation).

Kimmins, 1957: 261 as footnote (as synonym of *Ecnomus*)

Diagnosis: Maxillary palpi 5 segmented, its 2nd segment slightly longer than 1st but shorter than 3rd as well as 4th; 3rd segment positioned apically on 2nd; 5th segment longest, secondarily annulated and flexible. Forewings each with fork of R₁, forks I, II, III, IV, and V and discoidal cell, median cell, and thyridial cell; corneous nygmae in F-II and thyridial cell. Few species with fork of R₁ very faded and fork-I absent. Fork IV sessile. Hind wing with forks II and V and without discoidal cell, median cell,

or rc. Fork II without nygma.

Ecnomus suni sp. nov.

(Figs. 1-4)

Material examined: Holotype: ♂, India: Meghalaya; Cherrapunjee, 1200 m, 26-v-2011, Pandher, (PUPM), Ref. no. TRC/E/11.

Paratype: Collection data same as of holotype, 1♂, 1♀, (PUPM), TRC/E/12, TRC/E/13.

Description: Adult ♂; color in alcohol brown, dorsum of head dark brown. Length from tip of head to apex of folded forewing about 6mm; maxillary palp 1.50 mm, 4th segment longer than 2nd as well as 3rd, 5th longest; labial palp small 0.50mm long. Length of forewing 4.75 mm; venation typical for genus. Hind wing about 3mm long.

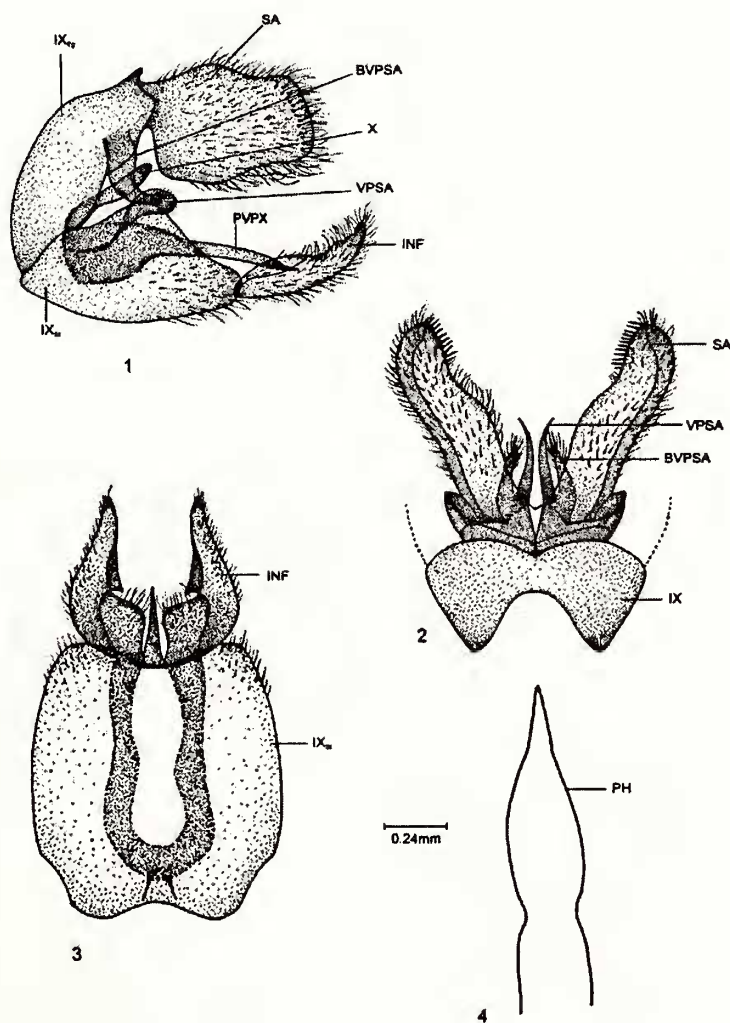
Male genitalia (Figs. 1-4): Anterior margin of sternum IX roundly produced, broad ventrolaterally; tergum IX broad, anterolaterally convex, pointed dorsoapically. Segment X lobe like, its posteroventral projection slender, expanded laterally in the middle. Superior appendage broad, quadrate and smaller than inferior appendages in lateral view, with small baso-ventral projection. Inferior appendages almost straight, at mesal margins in ventral view with mesal concavity at middle and with small mesal projection beyond this concavity, sharp at apex. Phallus sharp at apex, protruding laterally at middle.

Diagnosis: *Ecnomus suni* sp.nov. is allied to *E. thogarma* Malicky and Chantaramongkol, 2009 and *E. venimar* Malicky and Chantaramongkol, 1993a. The shape of inferior appendages in ventral view is close to *E. thogarma* but the shape of superior appendages differs in lateral view from the latter. In lateral view *E. suni* is more close to *E. venimar* because of the shape of superior appendages. However, *E. suni* is a distinct species as it differs in the shape of inferior appendages in ventral view from *E. venimar*.

Distribution: India: Meghalaya.

of Sun Changhai who is working on Chinese Trichoptera.

Etymology: This species is named in honour



Figs. 1-4. *Ecnomus suni* sp. nov., male genitalia. 1- left lateral view, 2- dorsal view, 3- ventral view, 4- Phallus ventral view. (IX_{Tr} - Tergum IX, IX_{St} - Sternum IX, SA - Superior appendage, BVPSA - Baso ventral projection of Superior appendage, X - Segment X, VPSA - Ventral projection of Superior appendage, PVPX - Postero ventral projection of X, INF - Inferior appendage, IX - Segment IX, PH - Phallus)

Key to the males of Indian species of genus *Ecnomus* McLachlan

- | | |
|---|---|
| <p>1. Superior appendage pointed at apex in lateral view.....<i>E. costalis</i> Martynov
- Superior appendage not pointed at apex in lateral view (Fig. 1).....2</p> <p>2. Superior appendage rounded apically in lateral view (Fig. 1).....3
- Superior appendage truncate apically in lateral view.....<i>E. pusanus</i> Mosely</p> <p>3. Inferior appendages longer than superior appendages in lateral view (Fig. 1).....4
- Inferior appendages shorter than superior appendages in lateral view....7</p> <p>4. Sternum IX broad apically in lateral view.....<i>E. moselyi</i> Martynov
- Sternum IX narrow apically in lateral view (Fig.1).....5</p> <p>5. Inferior appendage with very thin slender process at base; the former is</p> | <p>very slender in lateral view<i>E. indicus</i> Martynov</p> <p>- Inferior appendage without thin slender process at base; and it is not slender in lateral view (Fig. 1).....6</p> <p>6. Superior appendage very long and broad in its dorsal view; its upper distal margin not pointed (Fig. 2).....<i>E. suni</i> sp. nov.
- Superior appendage small and broad in its dorsal view; its upper distal margin pointed.....<i>E. fletcheri</i> Mosely</p> <p>7. Inferior appendage with an angular projection on dorsal side about midway and directed towards base in lateral view.....<i>E. montanus</i> Mosely
- Inferior appendage smooth without any angular projection on dorsal side in lateral view.....<i>E. mithraki</i> Malicky</p> |
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